35825

EXPLANATION OF SIGNIFICANT DIFFERENCE

BALLY GROUNDWATER CONTAMINATION SITE

I. INTRODUCTION

Site Name:	Bally Groundwater Contamination Site (the "Site")
Site Location:	Borough of Bally, Berks County Pennsylvania
Lead Agency:	US Environmental Protection Agency, Region III ("EPA" or "the Agency")
Support Agency:	PA Department of Environmental Resources ("PA DER")

Statement of Purpose

This Explanation of Significant Difference ("ESD") presents and documents changes to the Bally Groundwater Contamination Site Record of Decision, which was signed on June 30, 1989. The ESD is issued pursuant to Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. Section 9617(c).

The US Environmental Protection Agency is issuing this Explanation of Significant Difference for the following reasons:

o To ensure that the Site is remediated within an acceptable time; and

o To ensure that air emissions from Site-related remedial activities will be controlled in a manner consistent with EPA national policy on emissions from air strippers at Superfund groundwater remediation sites.

The ESD clarifies the Bally Groundwater Contamination Site Record of Decision ("ROD") by establishing quantitative air emission limits for Site-related air strippers. Formerly, such emission limits were not defined in the ROD.

II. SUMMARY OF THE SITE HISTORY, SITE CONDITIONS, AND SELECTED REMEDY

The Bally Groundwater Contamination Site is an area of contaminated groundwater in and around the Borough of Bally, located in Berks County Pennsylvania. The Bally wellfield and surrounding aquifer is contaminated with chlorinated volatile organic compounds (VOCs), most notably 1,1,1-trichloroethane (TCA) and trichloroethene (TCE), both industrial degreasers that are hazardous substances under CERCLA. The Site serves/

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as the drinking water supply source for the Borough of Bally and the surrounding area. Contaminated drinking water from the Site poses a threat to human health and the environment.

Studies conducted in 1983 indicated that the Bally Engineered Structures, Inc. plant, located in Bally Borough, was the source of groundwater contamination. In January 1987, representatives of Bally Engineered Structures, Inc., signed a Consent Agreement and Order with EPA to conduct a Remedial Investigation and Feasibility Study ("RI/FS") at the Site to determine the extent of the contamination, to evaluate health risks posed by the contamination, and to propose methods to remediate the aquifer. Subsequently, EPA reviewed and evaluated the RI/FS reports and selected an alternative for site remediation. A complete description of the selected remedy as well as EPA's rationale for the decision is presented in the Site Record of Decision (attached hereto as Exhibit 1).

The following components comprise the selected remedy, as described in the ROD:

- o Applying institutional controls on the use of existing private wells and the construction of new wells; and
- o Pumping and treating groundwater with a twofold objective:
    1. to provide potable municipal water; and
    2. to remediate the aquifer.

Air stripping is the method selected to treat groundwater. This treatment technique employs volatilization to remove volatile organic compounds (VOCs) from the groundwater, transferring contaminants from the liquid to the vapor phase. Following the air-stripping process, VOCs can either be released to the ambient air, or captured by air emission control devices.

In the Bally Record of Decision, EPA mandates the use of air emission controls but does not specify quantitative emission limits. Specifically, one of the following air control treatment options is required:

1. Vapor phase carbon adsorption (with offsite carbon regeneration) (ROD option 2D);
2. Vapor phase carbon adsorption (with onsite carbon regeneration) (ROD option 2E); or

3. Vapor phase catalytic oxidation (ROD option 2F).

III. DESCRIPTION OF SIGNIFICANT DIFFERENCE

On June 15, 1989, US EPA Headquarters in Washington, D.C. issued a policy directive on the control of air emissions from air strippers at Superfund groundwater sites (OSWER Directive 9355.0-28, "Control of Air Emissions from Superfund Air Strippers at Superfund Groundwater Sites" June 15, 1989; (See Attachment II). The directive specifies "trigger levels" for determining when it is necessary to control air emissions from Superfund stripping units and also establishes a uniform national policy on this subject. The Bally ROD did not incorporate this guidance. Consequently, this ESD is issued to modify the ROD so that the Site remedy is consistent with EPA's nation-wide air stripping/air control policy that was in place when the ROD was signed.

The ESD includes additional changes. In order to ensure that the Site is remediated within an acceptable period of time, EPA has reserved rights related to the design and operations of the groundwater treatment system.

This ESD modifies the ROD as follows:

o Air emission controls are no longer required irrespective of emission levels. The need for air controls is now dependent upon contaminant levels emitted from the air stripping units. Specifically, air emissions must be controlled such that the combined emissions from all site-related air strippers shall not exceed three pounds per hour (lbs/hr) during any one hour and fifteen pounds per day (lbs/day) during any twentyfour hour period.

o Air stripping without air emission controls (ROD process option 2C) may be retained for consideration if, and only if the combined emissions from all site-related air strippers does not exceed the levels stated in the previous paragraph.

o EPA reserves the right to determine the appropriate number of Site recovery wells and the appropriate design and location for all recovery wells. EPA will also control the withdrawal rate/ pumping rate of these wells. The emissions generated under the EPA approved design and operating specifications will in turn dictate the need for air emission controls.

IV. PUBLIC PARTICIPATION

This explanation is documented in the Administrative Record

file for the Site. The Administrative Record includes the ROD and all documents that formed the basis for EPA's selection of the cleanup remedy. The Administrative Record is available for public review at the locations listed below:

U.S.EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107
Hours: Mon.Fri. 9:00 a.m. to 4:00 p.m.

Bally Groundwater Contamination CERCLA Site
Information Repository
Bally Borough Business Office
South Seventh Street
Bally, PA 19503
(215) 845-2351

Questions or comments on EPA's action and requests to review the Administrative Record should be directed to:

Sherry Gallagher
Project Manager
Mail Code (3HW21)
U.S. EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-8188

V. SUPPORT AGENCY REVIEW

The Commonwealth of Pennsylvania has reviewed and concurred on this ESD.

VI. AFFIRMATION OF STATUTORY DETERMINATION

Considering the new information that has been developed and the changes that have been made to the selected remedy, the EPA and PADER believe that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable for this Site.

1-18-90 AR301578

Date

Edwin B. Erickson
Regional Administrator

ATTACHMENT I

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D C 20460

JUN 15 1989

OSWER Directive 9355.0-28

MEMORANDUM

SUBJECT: Control of Air Emissions From Superfund Air Strippers at Superfund Groundwater Sites

FROM: Henry L. Longest II, Director
Office of Emergency and Remedial Response

Gerald Emison, Director
Office of Air Quality Planning and Standards

TO: Addressees

PURPOSE

This memorandum establishes guidance on the control of air emissions from air strippers used at Superfund sites for groundwater treatment and establishes procedures for implementation. Under this guidance, Regions should continue to make air emission control decisions on a case-by-case basis using the nine remedy selection criteria and the remedy selection process set forth in the proposed National Contingency Plan (NCP). As described below, however, the evaluation and weighing of the criteria in a "to be considered" (TBC) context will differ according to the air quality status of the site's location.

BACKGROUND

Approximately 35% of the Records of Decision (RODs) signed to date have involved sites which use a pump and treat technique to either partially or fully remediate groundwater contamination. Close to 45% of these pump and treat sites have selected air stripping. For the foreseeable future, OERR expects to use air stripping at about the same rate. This treatment technique relies on volatilization to remove volatile organic compounds (VOCs) from the groundwater, i.e. it transfers the contaminants from the liquid to vapor phase. One known side effect of air stripping is the emission of VOCs, many of which

are toxic, to the ambient air. The Superfund Program uses control devices such as vapor phase carbon adsorption and incineration to control these emissions.

In response to a request from Regional Air Division Directors for a policy to guide the selection of controls for air strippers, OERR and OAQPS conducted a joint study. The results showed that historically close to half of the Superfund air stripper sites had adopted controls during remedy selection. Another 25 percent deferred the decision to the remedial design phase. At sites with RODs signed after the enactment of the Superfund Amendments and Reauthorization Act, approximately two-thirds of the air strippers are controlled. At these sites, control decisions were based on an analysis of the cleanup standards established in Section 121 of CERCLA and the other statutory considerations which together comprise the nine remedy selection criteria: overall protection of human health and the environment; compliance with Applicable or Relevant and Appropriate Requirements (ARARs); long-term effectiveness/permanence; reduction of mobility, toxicity or volume (MTV); short-term effectiveness; implementability; cost; State acceptance; and community acceptance. Control decisions to date have been driven largely by protectiveness and State ARARs for both air toxics control and VOC control for ozone reduction. Other criteria such as MTV, short-term effectiveness, cost, and community acceptance, have also influenced the inclusion of controls.

Despite the trend towards increased control of air emissions from Superfund air strippers, the Agency remains concerned with the control of these air emissions. This concern underlies the vigorous efforts by EPA, States, localities, and industry across the country to control air toxics and reduce VOCs in ozone nonattainment areas. The adoption of this policy responds to these concerns, reflects an overall Agency concern with preventing the cross-media transfer of pollutants, and recognizes that the number of Federal, State, and local ARARs for both VOCs and air toxics appears to be rapidly increasing.

The following policy has been adopted to guide Regional decisionmakers on the use of controls for air emissions from Superfund air strippers, and other vented Superfund sources of VOCs. This policy is grounded in the remedy selection process and distinguishes between sites located in attainment and nonattainment areas.

STATEMENT OF POLICY

For sites located in areas that are attaining the National Ambient Air Quality Standards for ozone, Regions should continue applying controls based on existing Agency policy. In most cases, this will mean the adoption of controls largely in response to State ARARs, risk management (i.e., protectiveness) guidelines, and other requirements of CERCLA Section 121.

In ozone nonattainment areas, however, the adoption of controls is more likely to be indicated even if they are not mandated by current Federal or State laws and regulations or indicated by a cancer risk analysis. Aside from cancer risk from air toxics, VOC emissions contribute to non-cancer health risks in nonattainment areas because most are precursors to the formation of ozone. Consideration of these non-cancer risks when applying the remedy selection criteria generally will show that in nonattainment areas Superfund air strippers, except those with the lowest emissions rates as indicated below, generally merit controls. In determining the need for air stripper controls at a particular Superfund site in a nonattainment area, the Regions should be guided by the emissions limit goals in the document entitled, "Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations," issued in May 1988 by the Office of Air Quality Planning and Standards (OAQPS) to aid States in revising their State Implementation Plans (SIPs) to incorporate post-1987 ozone attainment strategies. The OAQPS guidance indicates that the sources most in need of controls are those with an actual emissions rate in excess of 3 pounds per hour (lb/hr) or 15 lb/day or a potential (i.e., calculated) rate of 10 tons per year (TPY) of total VOCs. The calculated rate assumes 24-hour operation, 365 days per year. Regions should note that control levels are applied on a facility basis. For the purposes of this guidance, facility is defined as a contiguous piece of property under common ownership.

This guidance applies to air strippers at Superfund sites. In establishing the policy, however, the potential for applicability to other VOC sources is recognized. Generally, the guidelines described for air strippers are suitable for VOC air emissions from other vented extraction techniques (e.g., soil vapor extraction) but not from area sources (e.g., soil excavation).

This guidance applies to future remedial decisions at Superfund sites. The policy is not explicitly designed for

actions taken by the removal program in the case of emergency or time critical removal actions. However, where time and other response circumstances permit, such as for non-time critical actions, adherence to this policy is expected.

The control levels referred to above serve as guidelines only if ARARs do not exist or are less stringent than presented here. They are not intended to preclude or replace State proposals for more stringent levels of control in pursuit of Clean Air Act goals as part of SIP revisions in nonattainment areas.

IMPLEMENTATION

This guidance seeks to incorporate air quality concerns into the Superfund remedy selection process. In particular, the use of controls for Superfund air strippers in nonattainment areas demonstrates the Agency's commitment to reducing VOCs and thus progressing toward attainment of the ozone standard. Additionally, the guidance is consistent with both the current NCP and proposed revisions. Where ARARs do not exist, EPA may consider TBCs in setting target cleanup levels. This guidance constitutes a TBC.

The Remedial Investigation/Feasibility Study (RI/FS) should generate the data needed to support control decisions for both attainment and nonattainment areas. At a minimum, the five major types of information needed are:

- Estimated cumulative uncontrolled air emissions rate from all air strippers at the site
- Consideration of health risks from the execution of the remedy as well as from the uncontrolled site
- Control alternatives and their costs
- Ozone attainment status
- Air ARARs

For purposes of this guidance "nonattainment area" means any county included in a formal post-1987 ozone SIP deficiency notification (SIP call) or any other county where the ozone National Ambient Air Quality Standard was exceeded during the previous three-year period. EPA's initial SIP calls were issued pursuant to Section 110(a)(2)(H) of the Clean Air Act and were described in the September 7, 1988 Federal Register.

The RI/FS scoping phase and work plan development should describe the specific data to be generated and the methods for doing so. Remedial Project Managers should consult with the designated Air Superfund Coordinator for technical assistance. Additional assistance is available from National Technical Guidance Manuals developed jointly by the Air and Superfund program offices for estimating air emissions and conducting air pathway analyses. The ROD should summarize this information as appropriate and clearly document the basis for the air emissions control decision.

Addressees:
Regional Waste Management Division Directors
Regional Superfund Branch Chiefs
Regional Air Division Directors
Regional Air Branch Chiefs
OERR Division Directors
OAQPS Division Directors